

Work Order ID 115187

115187

Page 1

Monday, March 17, 2014 2:50:03 PM

Item ID: 646.3912

Revision ID:

Item Name: Shim

Start Date: 3/17/14

Required Date: 3/17/14

Reference:

646.3912
B115187

Accept

N900040100

Setup Start

NS1

Stop

NS2

Start Qty: 10.00

Req'd Qty: 10.00

10

10

Cust Item ID:

Customer:

Approvals:

Process Plan: AA

Date: 1403-19

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
646.3900	N/C								

110

0.00

110

Waterjet

FLOW CNC Waterjet

*Spring Steel
Blue .020"*

Memo

1-Cut as per Dwg

Dwg Rev: N/C

Prog Rev: N/C

2-Deburr if necessary

0.00

10 0 Jm14-06-4

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Quality Control

Memo

0.00

10 0 Jm14-06-4

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Design											
Doc/Data											
Equip/Tooling											
Handling/Pre											
Material											
Operator											
Offset/Setup											
Process											
Supplier											
Training											
Transport											
Unapproved											

FAULT CATEGORY							
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube		General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function		<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

Work Order ID 115187

Monday, March 17, 2014 2:50:03 PM

115187

Page 2

Item ID: 646.3912

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Shim

Start Date: 3/17/14

Start Qty: 10.00

10

Cust Item ID:

Required Date: 3/17/14

Req'd Qty: 10.00

10

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.00

Quality Control

(10) 14-06-04 DAS
9
9-89

140

Outsource process-Cadplate per QSI017 4.1.9.1

0.00

140

Outsource3

Memo

0.00

Outsource process - Cad plate

Issue P/O: 24624

CX 14/06/17 10

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.00

Packaging

14/12/11 (12)

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Work Order ID 115187

115187

Page 3

Monday, March 17, 2014 2:50:03 PM

Item ID: 646.3912 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Shim
 Start Date: 3/17/14 Start Qty: 10.00 *10* Cust Item ID:
 Required Date: 3/17/14 Req'd Qty: 10.00 *10* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				12			
170 *170* Packaging Packaging	Identify as per dwg & Stock Location <u>81</u> Memo ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING THE P# AND REV***	0.00 0.00				12X	14-7-11		DAS 28 9-89
180 *180* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00				MLJ	14-7-11		

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
		<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

Picklist Print

Monday, March 17, 2014 2:50:03 PM

Page 1

Work Order ID: 115187

115187

Parent Item: 646.3912

646.3912

Parent Item Name: Shim

Start Date: 3/17/14

Required Date: 3/17/14

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A 12.10.23 NEW ISSUE DD VERF:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MC1095S.020		Purchased	No			110	sf	14.0500	0.02	0.210526			
MC1095S 020									**	0.5		Jm14-06-4	
C1095 Blue Tempered Spring Steel Sheet .020													

Location

Loc Qty

Loc Code

MAT022

14.05

123537

5.4

m126423

8.65

126423.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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APICAL

INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO.

04250

SHEET 1 OF 3

DWG NO. 647.3900

REV: B

PREPARED BY J. SOTO

DATE: 11/18/2013

EFFECT ON DWG
☒ INC. ☐ UNINC.

DWG TITLE: DEFLECTORS

APPROVED BY:

ENGR *[Signature]*

MFG *[Signature]*

QC *[Signature]*

EFF. NEXT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON: REVISED PART 647.3915 INTO ASSY 647.3903. REVISED SHEET 7 AND ADDED SHEETS 8, 9, 11, 12. ADDED NOTES 7-9. REVISED F/N 3-9 AND ADDED F/N 10-13. ADDED NOTE 7 IN ORDER TO HANG PARTS FOR FINISHING PURPOSES. FIXED NOTES ON ASSY 647.3901

ECR:
13-038, 12-026

SHEET 1, ZONE C7 WAS:

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12.
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; PRETREAT PR-148 ADHESION PROMOTER PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX.
3. DEBURR AND BREAK ALL SHARP EDGES.
4. IDENTIFY IAW MPP-120.
- 5 APPLY F/N 3 AS REQUIRED TO ALL FAYING SURFACES OF F/N 6, 7 & 8 UPON ASSY.
- 6 MAXIMUM OR MINIMUM DIMENSION AFTER FINISH.

WAS

11/18/13 NP
14-03-19

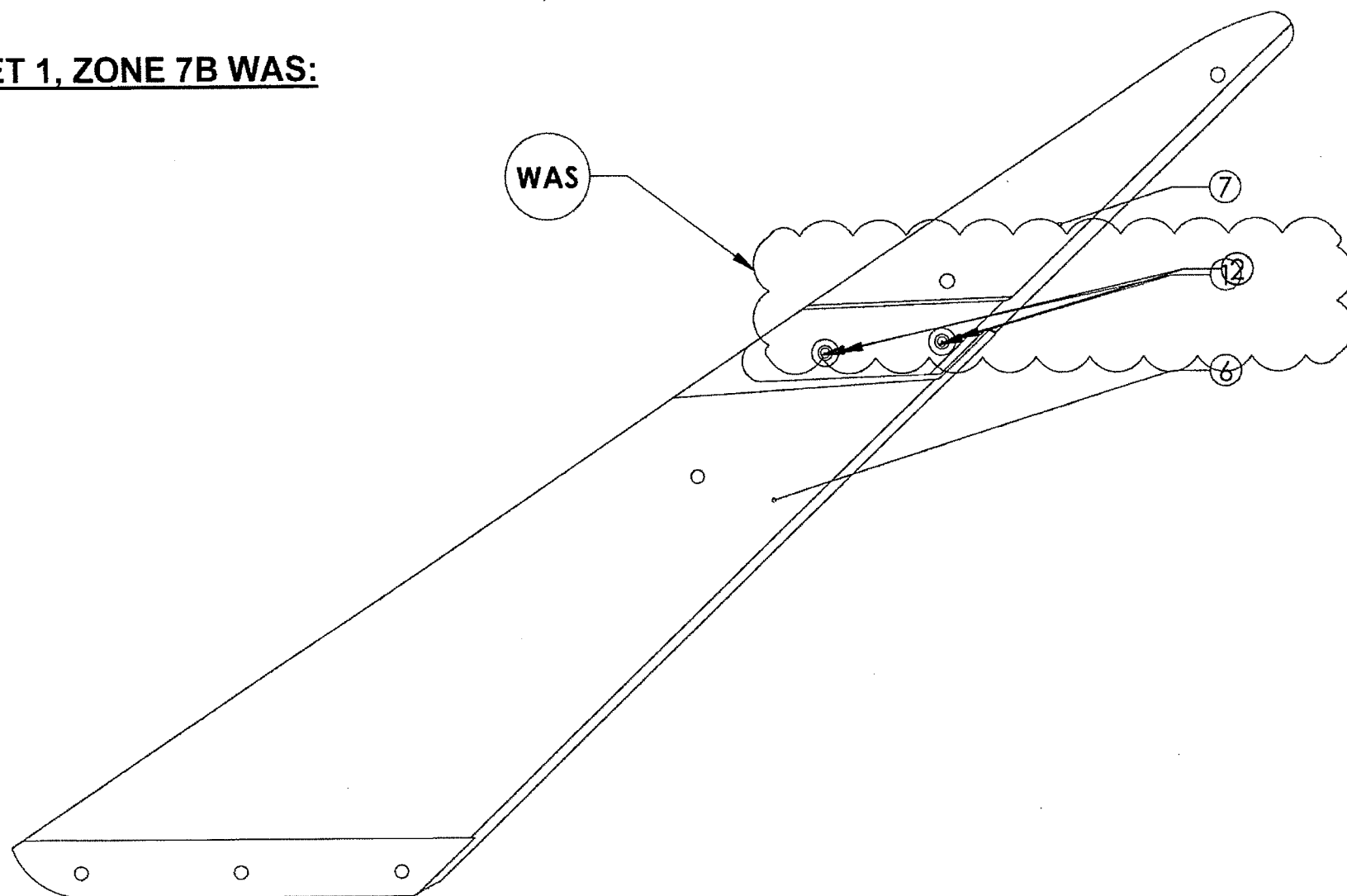
12	A	601.3072	6			RIVET	CR3213-6-9	
11	C	647.3917	2			DOUBLER		
10	C	647.3916	1			DEFLECTOR, UPPER HALF	△	△
9	R	647.3915	1			DEFLECTOR, LOWER HALF	△	△
8	R	647.3914		1		BREAKAWAY TIP LONG	△	△
7	R	647.3913			1	BREAKAWAY TIP MEDIUM	△	△
6	R	647.3912		1	1	LOWER DEFLECTOR	△	△
5	R	647.3911				212 UPPER DEFLECTOR	△	△
4	R	647.3910				412 UPPER DEFLECTOR	△	△
3	R	601.2045	A/R	A/R	A/R	RTV, LOCTITE 598		△
	C	647.3903	X			DEFLECTOR ASSY		△
F/N	TC	PART NUMBER	.3903	.3902	.3901			
			QTY			DESCRIPTION	MATERIAL	SPECIFICATION

DOCUMENTS EFFECTED:

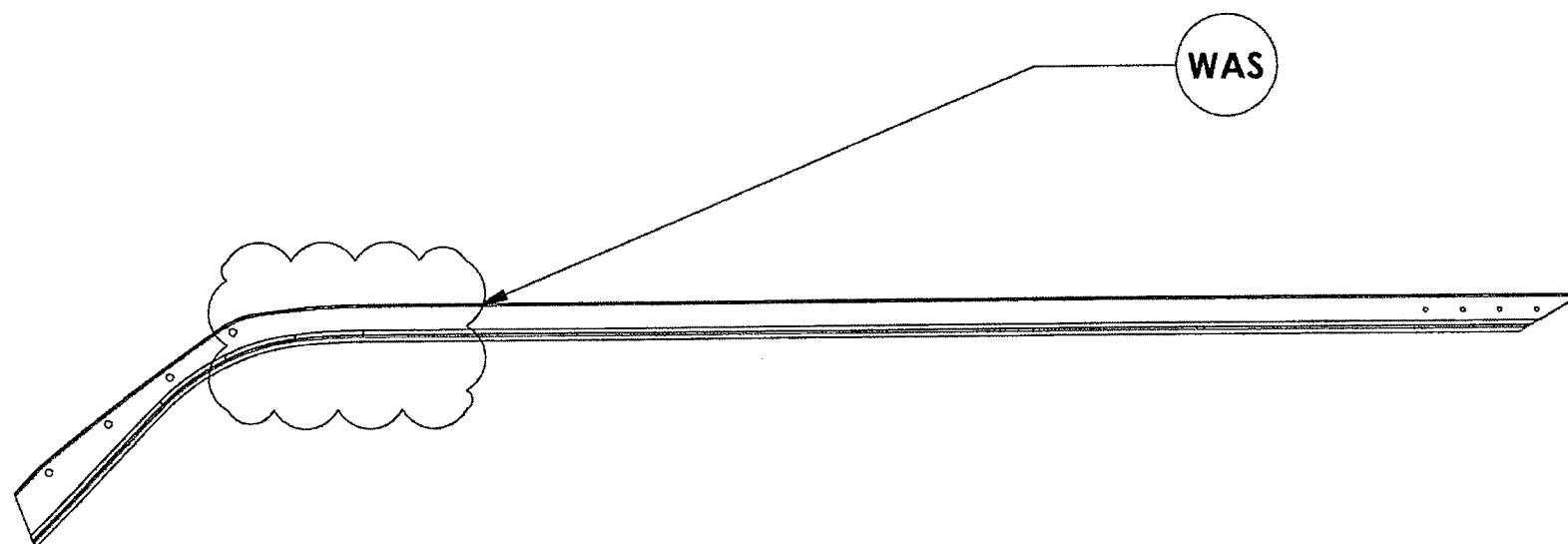
☐ MDL ☒ INSTALL INSTRUCTIONS ☒ ICA ☐ FMS ☒ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED
☐ YES ☒ NO

SHEET 1, ZONE 7B WAS:

647.3901

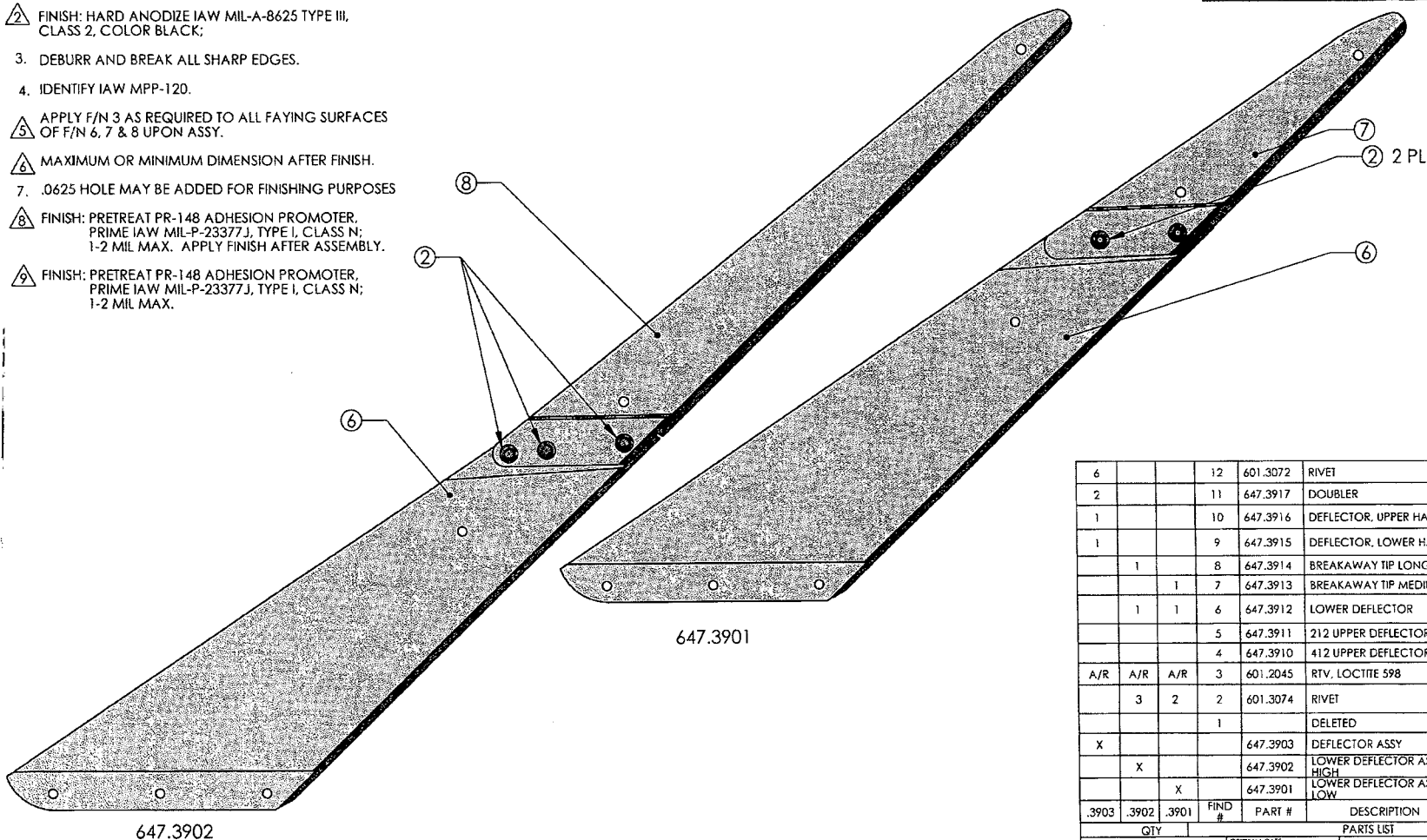
SHEET 7, ZONE A6 WAS:

647.3915

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NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12.
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK;
3. DEBURR AND BREAK ALL SHARP EDGES.
4. IDENTIFY IAW MPP-120.
- 5 APPLY F/N 3 AS REQUIRED TO ALL FAYING SURFACES OF F/N 6, 7 & 8 UPON ASSY.
- 6 MAXIMUM OR MINIMUM DIMENSION AFTER FINISH.
7. .0625 HOLE MAY BE ADDED FOR FINISHING PURPOSES
- 8 FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377 J, TYPE I, CLASS N; 1-2 MIL MAX. APPLY FINISH AFTER ASSEMBLY.
- 9 FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377 J, TYPE I, CLASS N; 1-2 MIL MAX.



REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYPE RELEASE, PPT		N/C
N/C	FINAL RELEASE	09/12/09	F. BRAVO
A	INCORPORATED ECH 0254, 0337 & 0393	07/24/12	F. BRAVO
B	INCORPORATED ECH 0405	08/02/13	F. BRAVO
C	INCORPORATED ECH 0406, 0408 & 0420	11/18/13	F. BRAVO

6			12	601.3072	RIVET	CR5213-6-9	
2			11	647.3917	DOUBLER		
1			10	647.3916	DEFLECTOR, UPPER HALF	△	△
1			9	647.3915	DEFLECTOR, LOWER HALF	△	△
	1		8	647.3914	BREAKAWAY TIP LONG	△	△
		1	7	647.3913	BREAKAWAY TIP MEDIUM	△	△
	1	1	6	647.3912	LOWER DEFLECTOR	△	△
			5	647.3911	212 UPPER DEFLECTOR	△	△
			4	647.3910	412 UPPER DEFLECTOR	△	△
A/R	A/R	A/R	3	601.2045	RTV, LOCTITE 598		△
	3	2	2	601.3074	RIVET	MS20470AD 6-12	
			1		DELETED		
X				647.3903	DEFLECTOR ASSY		△
	X			647.3902	LOWER DEFLECTOR ASSY HIGH		
		X		647.3901	LOWER DEFLECTOR ASSY LOW		
.3903	.3902	.3901	FIN #	PART #	DESCRIPTION	MATL	SPEC
QTY				PARTS LIST			
NEXT ASSY (S)				APICAL INDUSTRIES			
647.3800				2608 TEMPLE HEIGHTS DR.			
				OCEANSIDE, CA. 92056-3512 (760)724-5300			
				DEFLECTORS			
				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°			
				SHEET 1 OF 12			

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.125 X 45.0° TYP

SECTION B-B

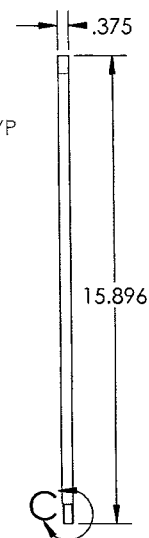
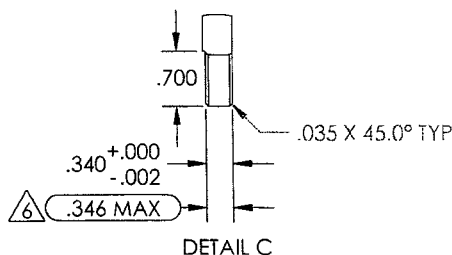
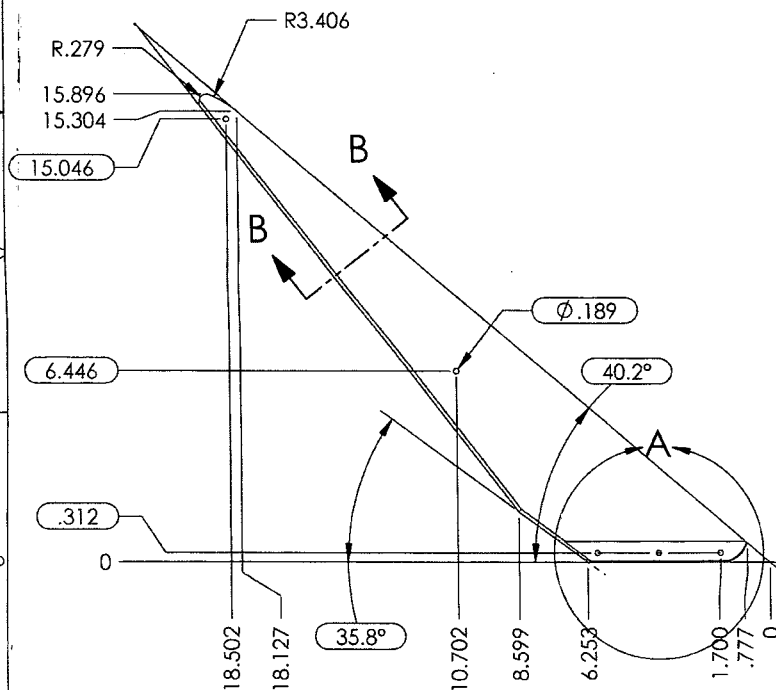
Ø.177 THRU 3PL

.266 X 17.9°

DETAIL A

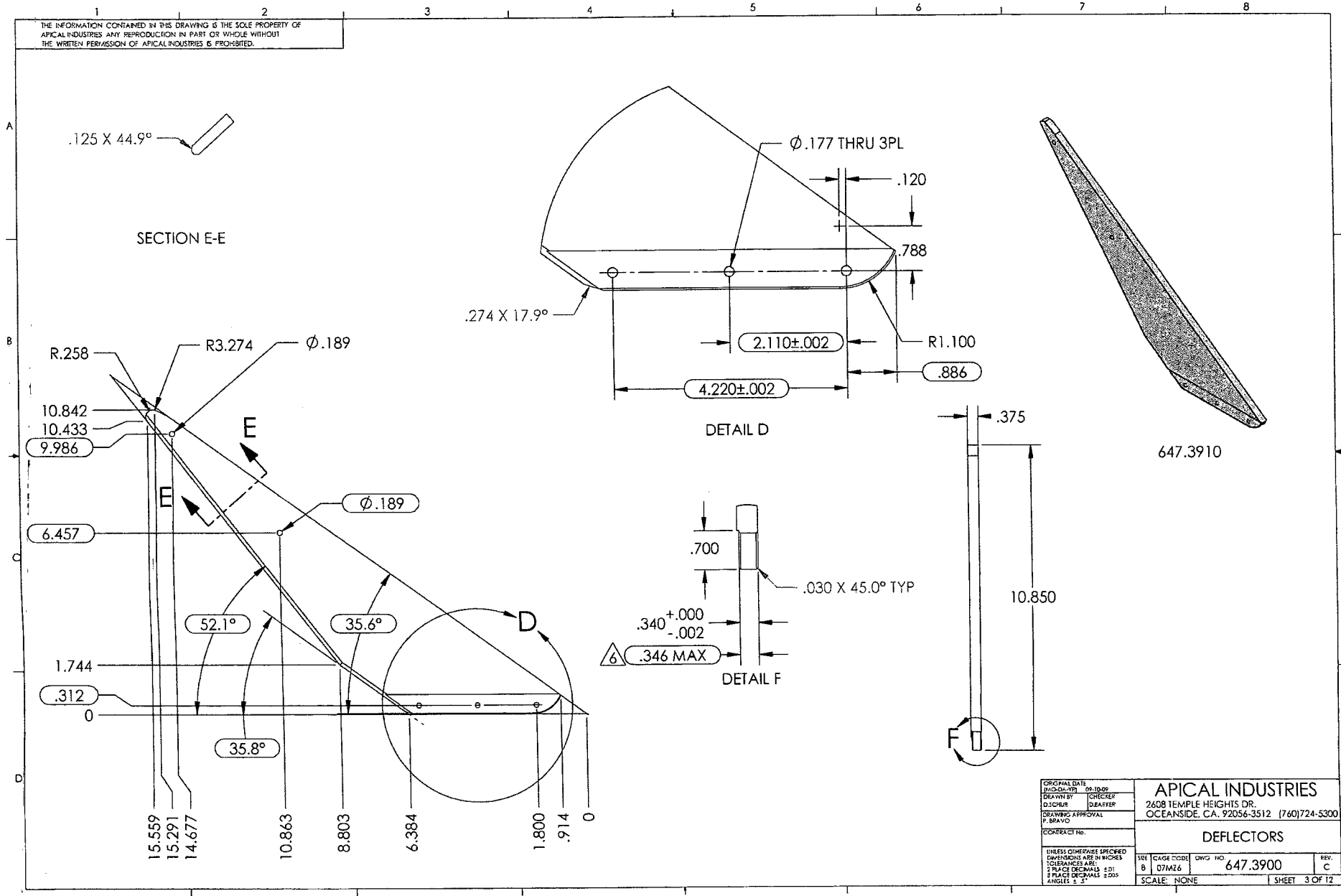
DETAIL C

647.3911



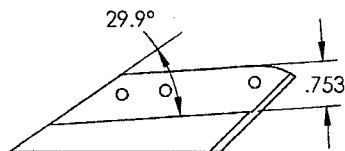
ORIGINAL DATE 08/08/11		APICAL INDUSTRIES	
DRAWN BY D.SCHUR	CHECKED D.BARKER	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. EDWARDS 05/10/12		DEFLECTORS	
CONTRACT NO.		REV B	C
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°		SCALE NONE	SHEET 2 OF 12

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

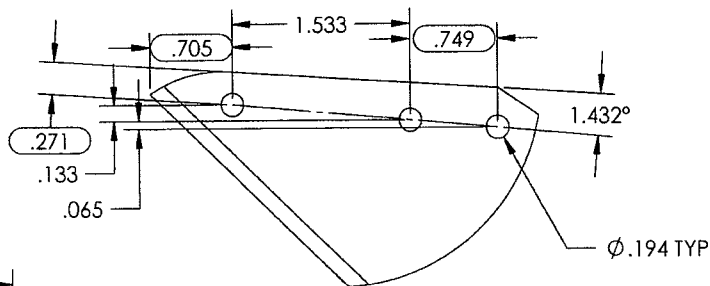


ORIGINAL DATE: 09-10-09		APICAL INDUSTRIES	
DRAWN BY: D. SCHUR	CHECKED BY: DEATYER	2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL: P. BRAYO		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT No.:		DEFLECTORS	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: 3 PLACE DECIMALS $\pm .01$; 2 PLACE DECIMALS $\pm .005$; ANGLES $\pm .5^\circ$		REV: B	REV: C
REV: B	REV: C	SCALE: NONE	SHEET 3 OF 12

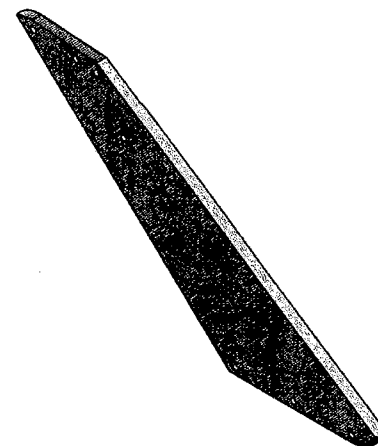
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



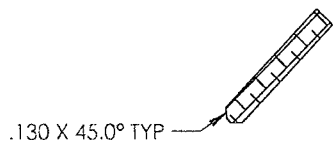
SECTION L-L



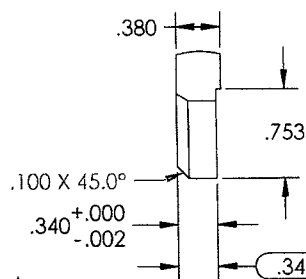
DETAIL H



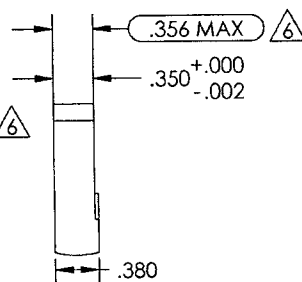
647.3912



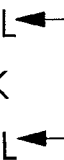
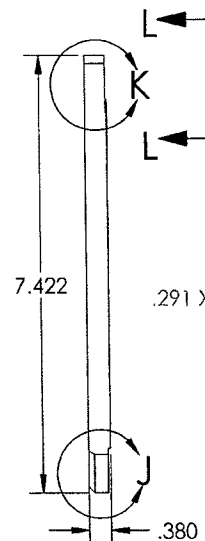
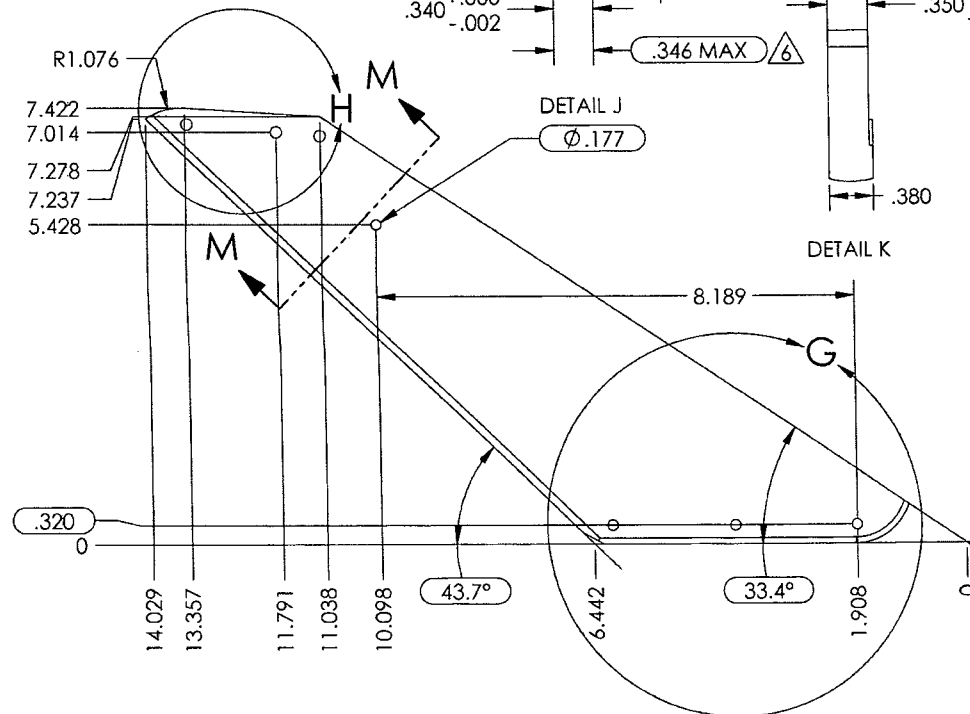
SECTION M-M



DETAIL J



DETAIL K



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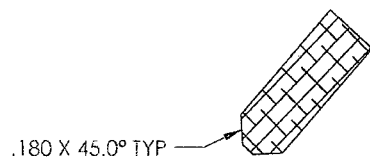
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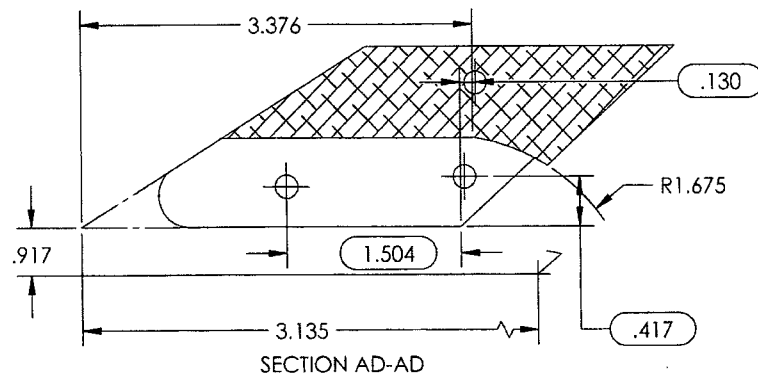
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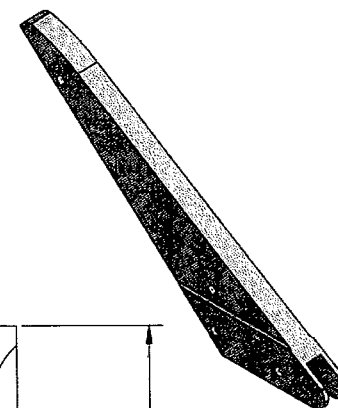
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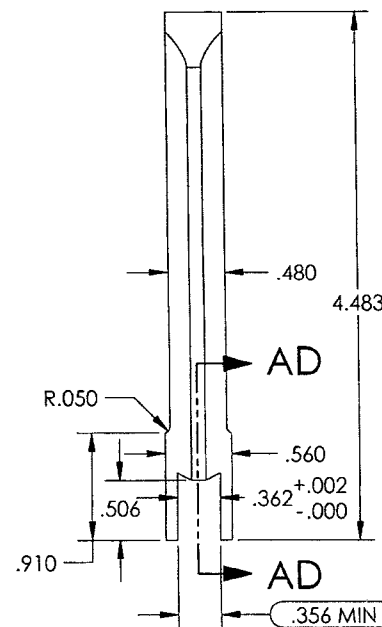
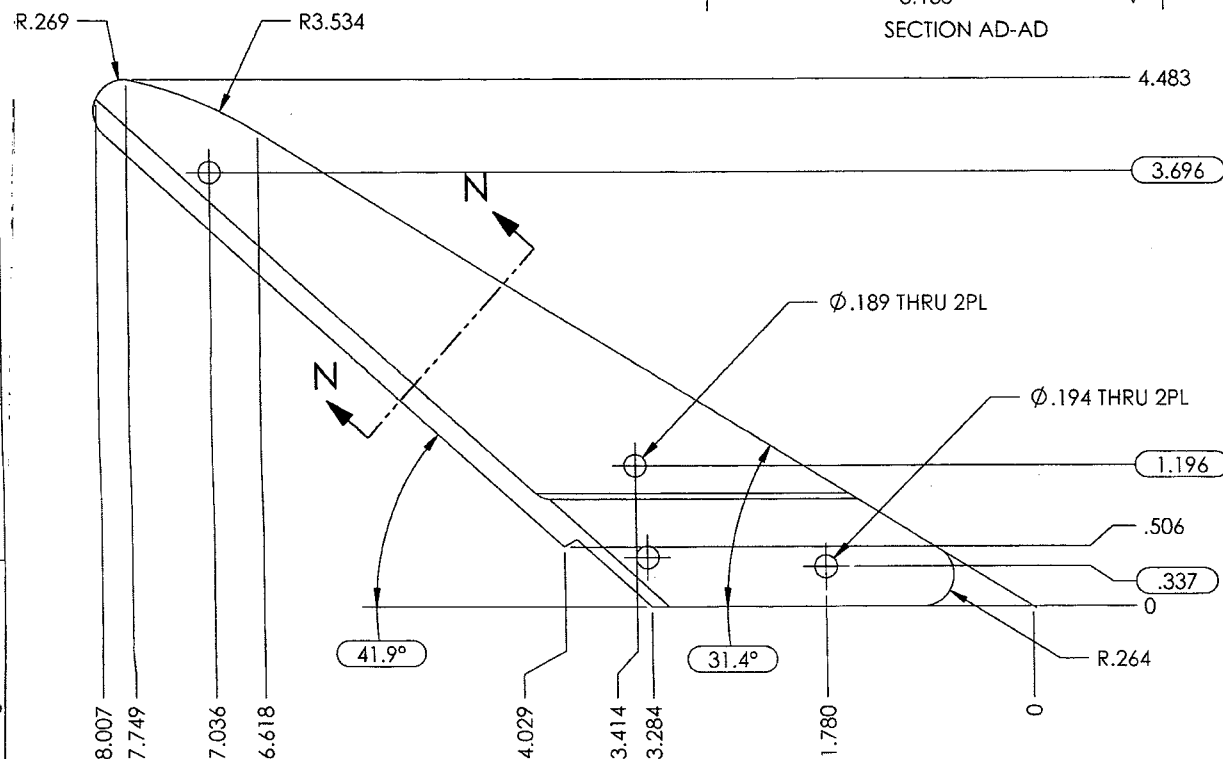
SECTION N-N



SECTION AD-AD



647.3913



ORIGINAL DATE 09-10-99		APICAL INDUSTRIES	
DRAWN BY D.SCHUP		2608 TEMPLE HEIGHTS DR.	
CHECKED BY D.BARKER		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAYO 09-10-99		DEFLECTORS	
CONTRACT NO.		REV. C	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		SHEET 5 OF 12	

1 2 3 4 5 6 7 8

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.175 X 45.0° TYP

SECTION T-T

R.267

8.611

7.876

R3.354

T

T

3.072

.740

.306

1.556

2.306

3.068

.931

R1.671

.418

SECTION AB-AB

42.83°

37.1°

3.875

3.129

3.123

.824

0

12.148

11.192

10.597

1.224

.533

.252

0

Ø.189 THRU 2PL

Ø.194 THRU 3PL

R.050 TYP

.910

.533

.362^{+0.002}_{-.000}

.356 MIN

6

.560

AB

AB

8.618

647.3914

ORIGINAL DATE: 01-10-99
DRAWN BY: []
CHECKED BY: []
DESIGNED BY: []
DRAFTER: []
DRAWING APPROVAL: []
P. REVISED: 06-10-99
CONTRACT NO.:

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ±.5°

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

DEFLECTORS

SHEET 6 OF 12

SCALE: NONE

DWG. NO. 647.3900

REV. C

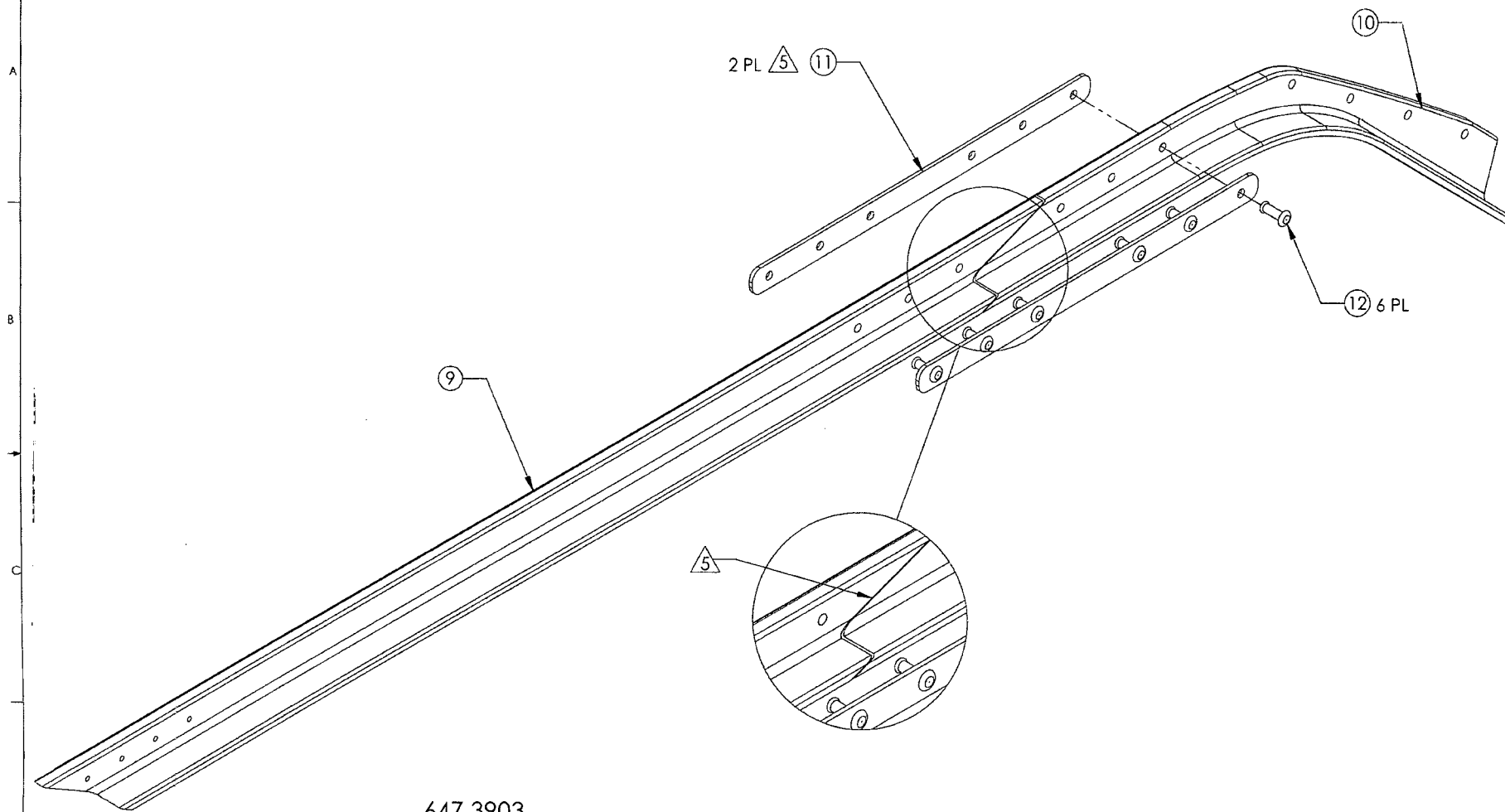
SECTION T-T

SECTION AB-AB

647.3914

OFFICIAL DATE (A/C-D-A-Y) 09-30-09 DRAWN BY D. SCHULTZ CHECKED BY T. BARBER DRAWING APPROVAL P. RAYGO 09-30-09 CONTRACT NO.	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300			
DEFLECTORS				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1. PLACE DIMENSIONS ± .01 2. PLACE DIMENSIONS ± .005 3. PLACE DIMENSIONS ± .000				
SHEET 07/126	CAGE CODE 07/126	DWG. NO. 647.3900	REV C OF 12	
SCALE NONE		SHEET 6 OF 12		

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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



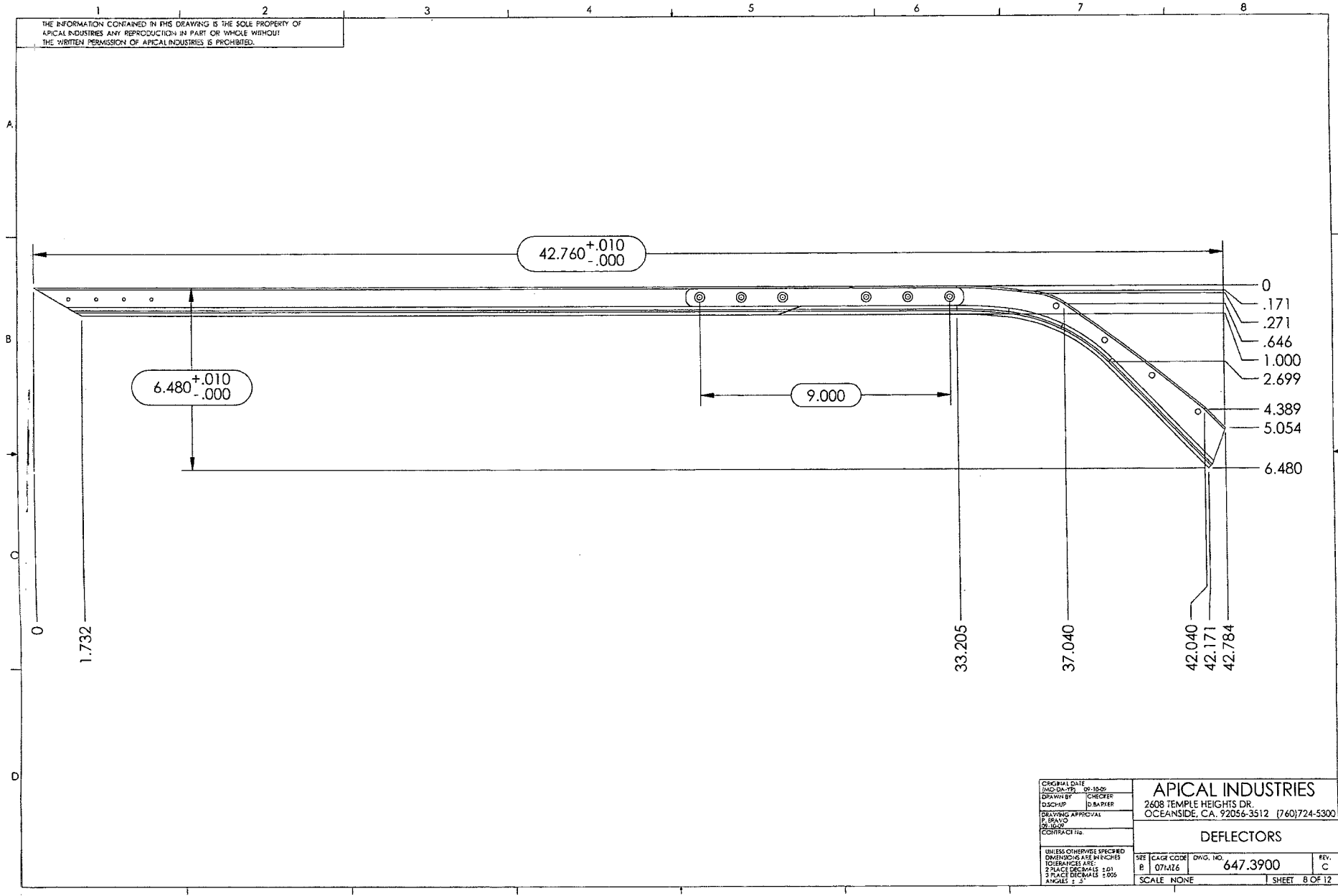
647.3903

ORIGINAL DATE BMD (A-11)		DATE 07/10/00	
DRAWN BY D.SCHUP		CHECKED BY D.BAVER	
DRAWING APPROVAL P. BAVER		DATE 07/10/00	
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°			
SIZE B		CAGE CODE 67M16	DWG. NO. 647.3900
SCALE NONE		REV. C	
		SHEET 7 OF 12	

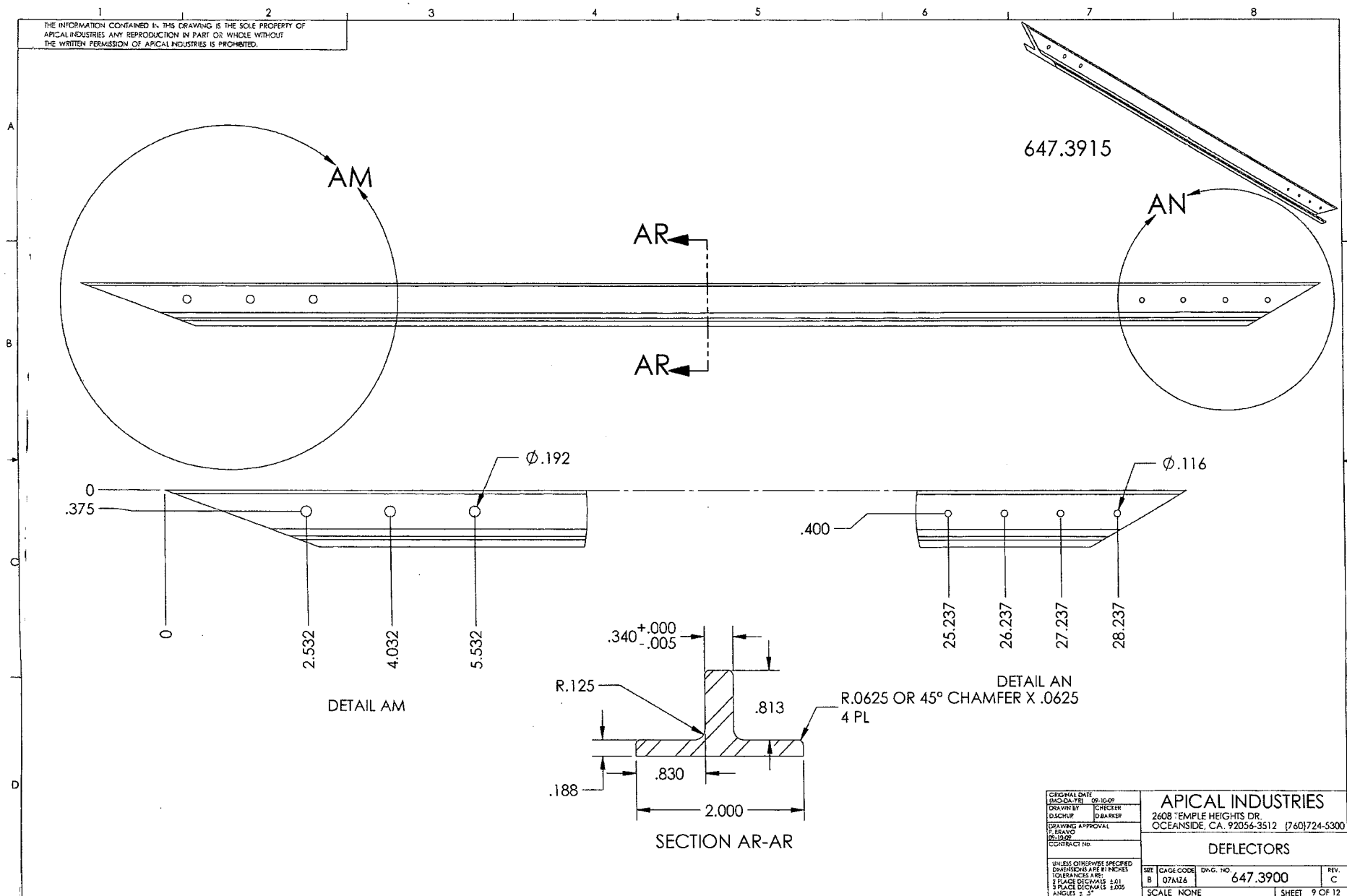
APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

DEFLECTORS

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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

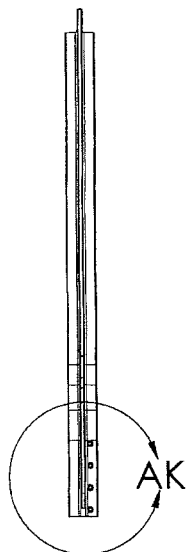


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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

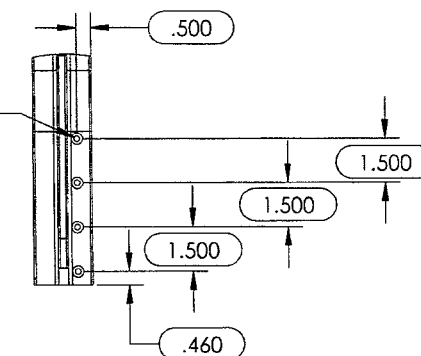


ORIGINAL DATE 10/24/87		APICAL INDUSTRIES	
DESIGNED BY D.SCHUP		2608 TEMPLE HEIGHTS DR.	
DRAWING & APPROVAL P. BRAY		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT NO.		DEFLECTORS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS 3 PLACE DECIMALS .005 ANGLES ± 5°		SIZE B	REV. C
		CAGE CODE 07A126	647.3900
		SCALE NONE	SHEET 9 OF 12

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4X $\phi .196 \pm .010$ THRU ALL
✓ $\phi .385 \pm .020 \times 100^\circ \pm 1.000^\circ$

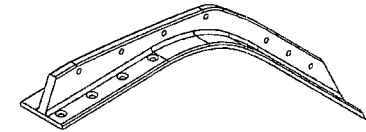


DETAIL AK

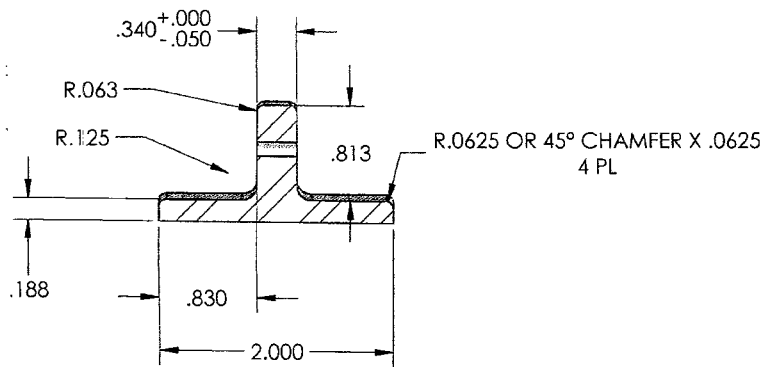
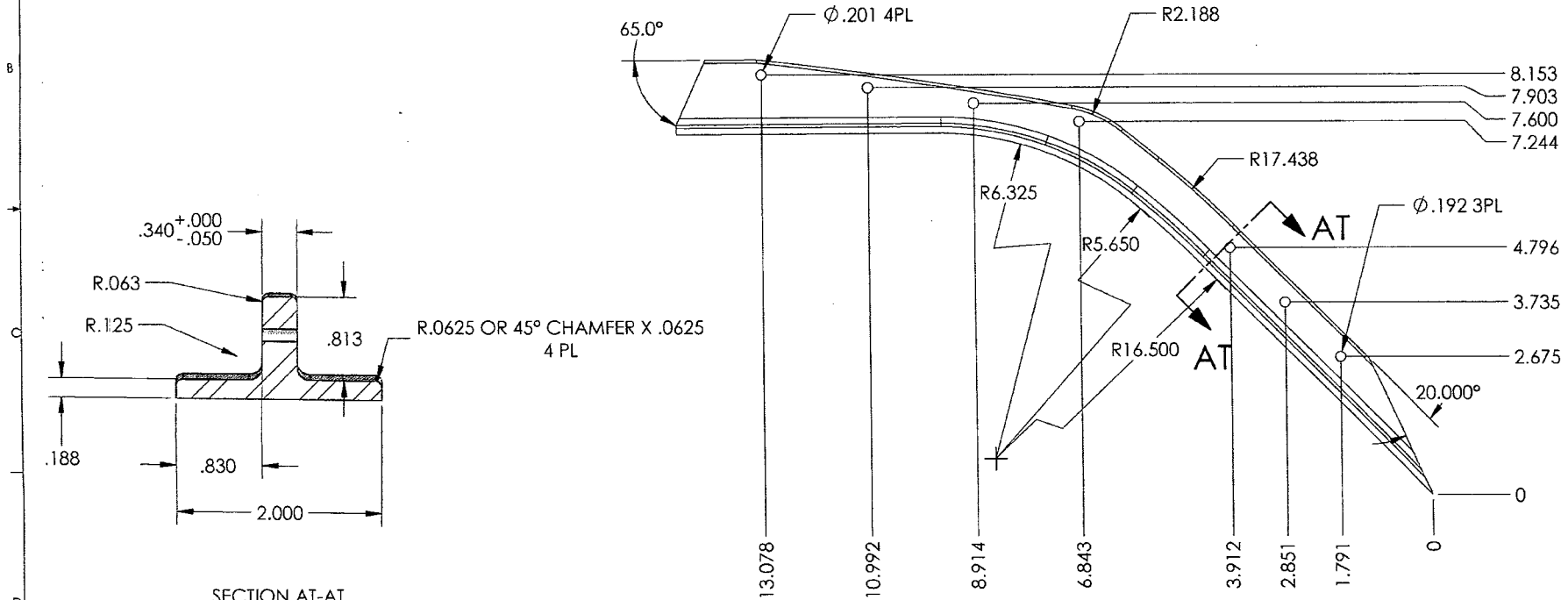
647.3915

ORIGINAL DATE DWD-DN-7-81 09-10-09		APICAL INDUSTRIES	
DRAWN BY: D. SCHUR		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: D. BARKER		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. REAVIS		DEFLECTORS	
CONTRACT NO.		DWG. NO. 647.3900	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS 2 PLACE DECIMALS .0005 ANGLES ± .5°		SEE CAGE CODE B 07M16	REV. C
SCALE: NONE		SHEET 10 OF 12	

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647.3916



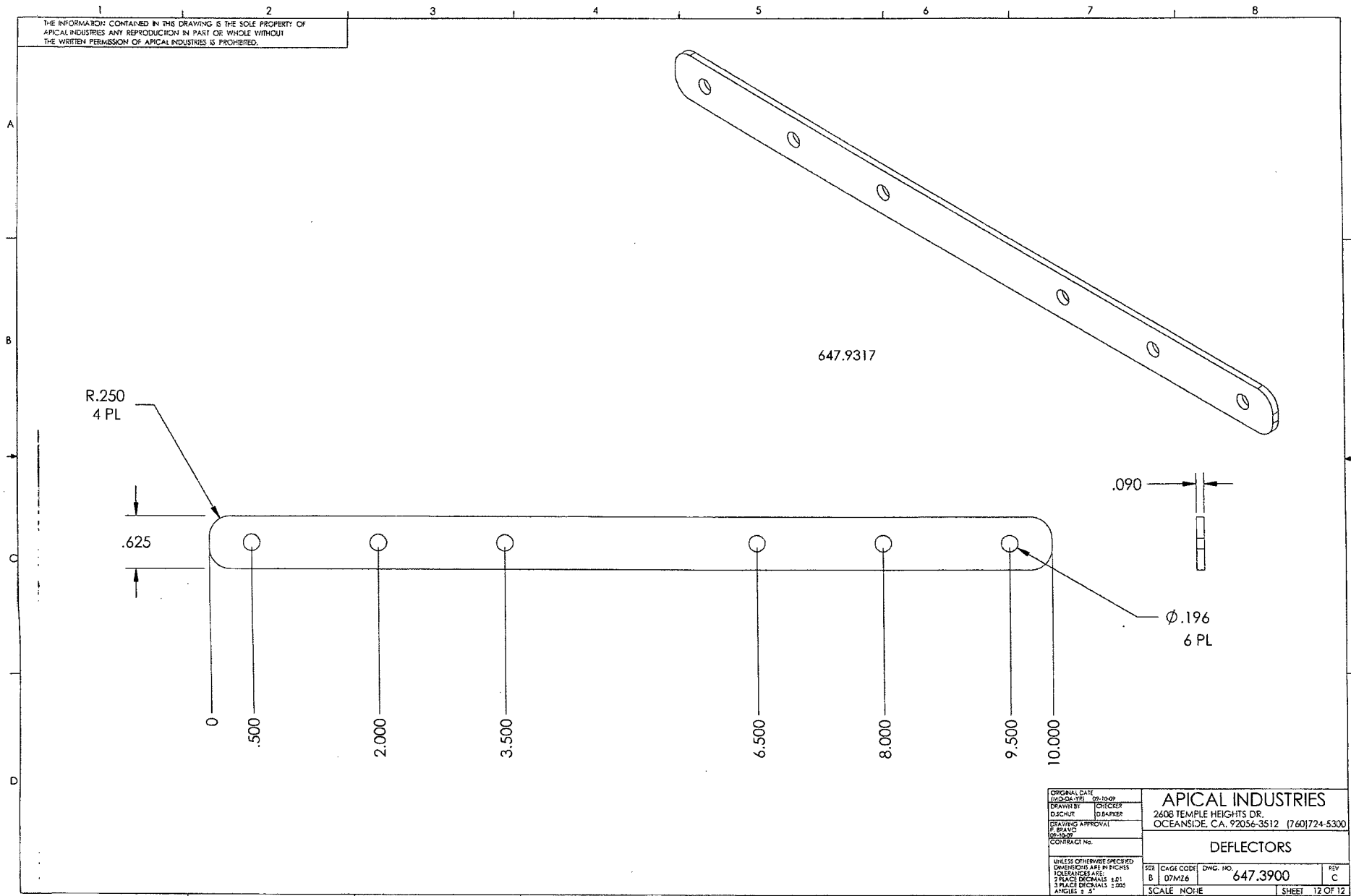
SECTION AT-AT

ORIGINAL DATE 12/01/01	BY D.SCHNEIDER	DATE 01/10/02	BY D.SCHNEIDER
DESIGNED BY D.SCHNEIDER	CHECKED BY D.B. REEF	APPROVED BY P. BRADY	DATE 01/10/02
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.010 3 PLACE DECIMALS ±.005 ANGLES ± 5°			
SIZE B	CAGE CODE 07M26	ENG. NO. 647.3900	REV. C
SCALE NONE		SHEET 11 OF 12	

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA 92056-3512 (760)724-5300

DEFLECTORS

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ORIGINAL DATE (YY-MM-YY) 09-10-09		APICAL INDUSTRIES	
DRAWN BY: JCSCHUR		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: D.BARKER		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL J. BRADY		DEFLECTORS	
CONTRACT NO.		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.001 ANGLES ± .5°	
SIZE B	CAGE CODE 07M26	DWG. NO. 647.3900	REV C
SCALE: NONE		SHEET 12 OF 12	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO24624**

Purchase Order Date 6/17/2014

PO Print Date 6/19/2014

Page Number 1 of 2

Order From :

VC-CAD002

CADORATH COATING
2150 LOGAN AVE.
WINNIPEG, MB R2R 0J2
CA

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

RECEIVED

Contact Name

Vendor Phone 204 633 9420

Ship To Contact

Ship To Phone

Ship Via: FedEx PI collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
----------	--	------------------------	--------------------------------------	----	--------------------------------	---------------	----------------

1	115002	646.3910 SHIM	7/3/2014 Yes 7/3/2014		10.00	\$10.50	\$105.00
---	--------	---------------	-----------------------------	--	-------	---------	----------

FINISH: CAD PLATE PER QQ-P-416 TYPE II CLASS 2

PART ARE MADE FROM SHIM STOCK, C1095 BLUE TEMPERED SPRING STEEL

Line Total: \$105.00

2	115187	646.3912 SHIM	7/3/2014 Yes 7/3/2014		10.00	\$10.50	\$105.00
---	--------	---------------	-----------------------------	--	-------	---------	----------

FINISH: CAD PLATE PER QQ-P-416 TYPE II CLASS 2

PART ARE MADE FROM SHIM STOCK, C1095 BLUE TEMPERED SPRING STEEL

Line Total: \$105.00

Note:

6/19/2014

Packing Slip



Cadorath Coating

2150 Logan Avenue, Winnipeg, Manitoba R2R-0J2

Phone: (204) 633-9420 Fax: (204) 633-8033

INVOICE NUMBER:

S 72063

Net 2% Interest Per Month charged on Overdue Accounts.

Any claims for shortages, overcharges, or damaged goods must be made within seven (7) days from receipt of goods.

Sold To: Dart Aerospace Ltd. 1270 Aberdeen St. Hawksbury, ON K6A 1K7
ShipTo:

Customer Order #:	Date Received:	Terms:	G.S.T. #:	Ship Via:	Ship Date:
PO24624	Jun-18-2014	NET 30 DAYS	10071.6547 RT0001		Jul-10-2014

Item # Qty P/N & Description

1	10 EA	SHIM	S/N 115002
		P/N 646.3910	W/O 136853
2	12 EA	SHIM	S/N 115187
		P/N 646.3912	W/O 136854

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jul-10-2014

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 136854

INVOICE #: 72063

**CONTRACT OR
PURCHASE ORDER # PO24624**

DESCRIPTION: SHIM

QTY 12

P/N # 646.3912

S/N # 115187

STRIP IAW MIL-STD-871. CADMIUM PLATE IAW AMS-QQ-P-416C
TYPE 2 YELLOW CLASS 2. BAKE HEAT CHART # 14-662 AND # 14-
671.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.



Approved Inspector:

A handwritten signature in black ink, appearing to be 'Z' followed by a long horizontal stroke.